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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/089,735 Confirmation No.: 3056
Applicant : Gunther MULLER, et al.
Filed : April 4, 2002
TC/A.U. : 2856
Examiner : Charles Garber
Docket No. : 056226.50943
Customer No. : 23911
Title : Acoustic Pressure Calibrator

APPEAL BRIEF

Mail Stop Appeal Brief-Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

On July 19, 2004, Appellants appealed to the Board of Patent Appeals and Interferences from the final rejection of claims 1-5. The following is Appellants' Appeal Brief submitted in triplicate pursuant to 37 C.F.R. §1.192.

REAL PARTY IN INTEREST

EADS Deutschland GmbH, 81663 München, Germany

RELATED APPEALS AND INTERFERENCES

There are no interferences or appeal proceedings known to Appellants or Appellant's legal representative which will directly effect or be directly affected by or having a bearing on the board's decision in the pending appeal.

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STATUS OF CLAIMS

This application currently contains claims 1-5.

STATUS OF AMENDMENTS

Subsequent to the Final Patent Office Action of March 19, 2004 Appellants submitted a Response on June 21, 2004 which made no changes to the claims. The Advisory Action of July 13, 2004 indicated that the response was considered but did not place the application in condition for allowance.

SUMMARY OF THE INVENTION

The presently claimed invention is defined by independent apparatus claim 1 and independent method claim 4. The system and method are designed to provide improved accurate calibrations immediately before a measuring process and during the entire measuring process even at high pressure sound levels. This is accomplished by calibration of different sound pressure levels through adaptation modules. The sound pressure level calibrator and method of the present invention function with a calibrator able to be installed in the sound pressure level sensor.

More specifically, the calibrator illustrated in the figure connects the output of the pistonphone 1 to a high pressure adapter 2. This adapter includes a quarter wavelength resonator 6 for amplifying sound pressure and an expanded adapter opening 7 with a sealing ring in order to soundproof the connection through a sound pressure level sensor 3 being tested. Each of independent claims 1 and 4 require that the high-pressure adapter 2 includes a

tube formed as a $\lambda/4$ resonator having a length which is adapted to the excitation frequency of the pistonphone to amplify the sound pressure of the pistonphone volume. Additionally, the volume of the pistonphone is adjustable so that a sound pressure within a selected excitation frequency can be produced. The figure shows this resonator 6 with an expanded adapter opening 7 for the sound proof connection of the high pressure adapter to the level sensor 3 being tested by means of the sealing ring 8.

ISSUES

The issue to be decided is whether independent claims 1 and 4 and dependent claims 2-3, and 5 are properly rejectable under 35 USC §103 as unpatentable over Takashi et al. (JP 405049097 English language abstract only) in view of Barham (the NPL laser pistonphone).

GROUPING OF THE CLAIMS

Appellants submit that claims 2, 3 and 5 do not stand or fall together with the respective independent claims 1 and 4 from which they depend.

ARGUMENT

Appellant's traversal of the rejection is based on claim features within each of independent claims 1 and 4 which are not obvious variations to one skilled in the art having before them the references of record.

Each of independent claims 1 and 4 require a pistonphone whose output is connected to a high pressure adapter and that this high pressure adapter includes a $\lambda/4$ resonator having a length which is adapted to the excitation frequency of the pistonphone to amplify the sound pressure produced in the pistonphone and an extended adapter opening with a sealing ring for sound proof connection to the level sensor being calibrated.

In the rejection under 35 USC §103 contained in the Final Patent Office Action, the reference to Takashi is cited for disclosing a sound pressure device for measuring and calibrating microphone characteristics having a pistonphone with pistons 11 and a volume adjusted by movement of the members 1 and 2 to produce a variable sound pressure. The rejection includes the statement that the cylinder chamber 3 of Takashi is a $\lambda/4$ resonator. Still further the rejection indicates that the claimed terminology “adapted to” is not a positive limitation with reference being made to *In re Hutchinson*, 69 USPQ 138. In order to meet the requirement of “selected excitation frequency”, the reference to Barham has been cited for teaching a calibration that may be “used over a wide range.”

Applicants submit that the pistonphone of Takashi '097 has a piston 11 and a pressure chamber 3 with adjustable volume formed by members 1 and 2. However claims 1 and 4 recite, in addition to the pistonphone, a high pressure adapter connected to the output of the pistonphone which includes a tube formed as a $\lambda/4$ resonator having a length adapted to the excitation frequency of the pistonphone. Also required is an expanded adapter opening and a sealing ring

for a sound proof connection. In contrast, the reference to Takashi has a microphone mount 12 so that the microphone is mounted to the casing in order to face the pressure chamber with the air tight member 15. Thus, there is a connection directly between the microphone to be calibrated and the volume of the pressure chamber. There is no showing in Takashi of a high pressure adapter "connected to an output of the pistonphone volume" which includes a tube formed as a $\lambda/4$ resonator having a length adapted to the excitation frequency of the pistonphone. Additionally, there is no showing in Takashi that the amplifier adapter has an expanded opening for sound proof connection to the microphone to be calibrated because the microphone of Takashi is directly connected to the pressure chamber 3.

The final rejection indicates that the chamber 3 of Takashi is a high pressure adapter. Appellants respectfully submit that this is an impossibility because the chamber 3 is required to form the pistonphone so that it cannot be both the pistonphone volume and the adapter connected to the pistonphone. The pistonphone of the present invention is claimed as having an adjustable volume and a piston while the high pressure adapter is claimed as being connected to the output of the volume. The claimed features, their interconnections and their operation are not shown in Takashi. Independent claims 1 and 4 require both an adapter and a pistonphone. Therefore if chamber 3 of Takashi is the pistonphone volume then there is no adapter and conversely if chamber 3 is an adapter than there is no pistonphone volume. It cannot be both.

The final rejection is also constructed on the proposition that there is a failure to recite a positive limitation due to the term “adapted to”. Appellants submit that the *In re Hutchinson*, cited by the Examiner stands for the proposition that, a statement in an “introductory clause” is not a limitation in the patentable sense. Claims 1 and 4 do not have “adapted to” in the Introductory Clause. The Hutchinson case is specifically addressed to the preamble and a copy of the first page of Hutchinson so indicating was included with the response filed on February 10, 2004.

Thus *In re Hutchinson* does not stand for the proposition that “adapted to” is not a positive limitation. As a result, this limitation cannot be ignored. As an indication that “adapted to” functions as a limitation, MPEP §2173.05(g) calls attention to *In re Venezia* 189 USPQ 149 (CCPA 1976) for an indication that limitations such as “members adapted to be positioned” serve to precisely define “structural attributes of interrelated component parts”. Additionally *In re Venezia* discusses claim language which calls for sleeves “adapted to be fitted” over insulating jackets, as “imparting structural limitations to the sleeve”.

In addition, Appellants submit that Takashi does not disclose that the amplifier adapter has an expanded opening for a sound proof connection to the microphone to be calibrated and Takashi is not a high pressure adapter because the chamber 3 is that portion which is required to form the pistonphone so it cannot be both the pistonphone volume and the adapter connected to the pistonphone. Still further, the pistonphone is claimed in Applicants’

independent claims 1 and 4 as having a piston with an adjustable volume and the high pressure adapter is claimed as being connected to the output of the volume.

The secondary reference to Barham, even accepting the statement of the rejection for it's showing, adds nothing toward meeting the claimed limitations of independent claims 1 and 4 and thus the combination of Takashi and Barham are not supportive of a rejection under 35 USC §103.

Dependent claim 2 is separately patentable as it further limits the resonator to being a tube with a length having a constant diameter which is yet another defining feature not shown by either of the references and dependent claim 3 Further limits independent claim 1 by reciting an integral mechanical link used to improve the sound proof connection high pressure adapter to the sound pressure level sensor which is separately patentable from independent claim 1. Finally, independent claim 5 is separately patentable from independent claim 4 because of the recitation of the mechanical compensation link integral with the high pressure adapter. Thus, claims 2, 3 and 5 do not stand or fall together with independent claims 1 and 4.

APPENDIX

An appendix containing a copy of the claims is attached hereto.

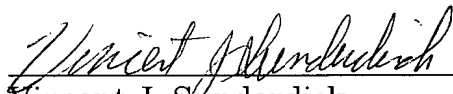
CONCLUSION

Therefore, in view of the distinguishing features between the claimed invention and the references, as discussed above, Appellants respectfully request that the decision of the Examiner in finally rejecting claims 1-5 should be REVERSED.

This Appeal Brief is accompanied by a check in the amount of \$450.00 in payment of the required appeal fee. This amount is believed to be correct, however, the Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 05-1323, Docket No.: 056226.50943. A triplicate copy of this Appeal Brief is attached.

Respectfully submitted,

October 19, 2004



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APPENDIX

1. A sound pressure level calibrating a sound pressure level sensor comprising:

a pistonphone having a piston and an adjustable pistonphone volume for producing a sound pressure with a selected excitation frequency;

and a high-pressure adapter, which is connected to an output of the pistonphone volume; wherein

the high-pressure adapter includes a tube formed as a $\lambda/4$ resonator having a length which is adapted to the excitation frequency of the pistonphone to amplify the sound pressure produced in the pistonphone volume and an expanded adapter opening with a sealing ring for a soundproof of connection to said sound pressure level sensor to be calibrated.

2. The sound pressure level calibrator as claimed in claim 1, wherein the resonator is a tube of a length (L) with a constant diameter (d).

3. The sound pressure level calibrator as claimed in claim 1, wherein the high pressure adapter, further includes an integral mechanical compensation link in order to improve the soundproof connection of high pressure adapter to the sound pressure level sensor.

4. A method for calibrating a sound pressure level sensor comprising the steps of:

providing a pistonphone having a piston and an adjustable pistonphone volume for producing a sound pressure with a selected excitation frequency;

amplifying the produced sound pressure by means of a high-pressure adapter which includes a tube formed a $\lambda/4$ resonator having a length which is adapted to the excitation frequency of the pistonphone to amplify the sound pressure produced in the pistonphone volume, and an expanded adapter opening with a sealing ring in order to provide soundproof connection to said sound pressure level sensor to be calibrated.

5. The method according to claim 4, further comprising the step of forming a mechanical compensation link integral with the high pressure adapter in order to improve the soundproof connection of the high pressure adapter to the sound pressure level sensor.